

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

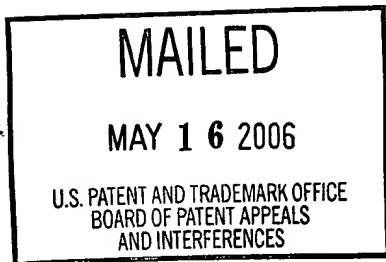
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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PHILLIP E. WILSON, STANLEY A. MCINTOSH  
AND MATTHEW B. HOYT

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Appeal No. 2006-0876  
Application 08/715,724

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ON BRIEF

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Before PAK, OWENS and FRANKLIN, *Administrative Patent Judges*.  
OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This appeal is from a rejection of claims 2, 3, 9, 10 and 23, which are all of the pending claims.

*THE INVENTION*

The appellants claim an acid-dye and coffee stain resistant carpet having fibers made of a polyamide core substantially or completely covered by a sheath of a specified polyamide.

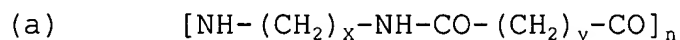
Claim 2 is illustrative:

2. An acid-dye and coffee stain resistant carpet comprising:

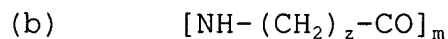
a backing material; and

stain resistant sheath/core bicomponent face fibers with non-round cross-sections affixed in said backing material and bound thereto;

said face fibers comprising: a core of a first polyamide component; and a sheath occupying from about 3 to 9 percent of the fiber and substantially or completely covering said core, said sheath comprising a second polyamide component which is inherently chemically compatible with said first polyamide component, said second polyamide component comprising at least one stain resistant polyamide polymer selected from the group consisting of:



where x and y may be the same or different integers from about 4 to about 30, the sum of x and y is greater than 13, and n is greater than about 40; and



where z is an integer from about 9 to about 30 and m is greater than about 40;

(c) derivatives of (a) or (b) including polymers substituted with one or more sulfonate, halogenate, aliphatic or aromatic functionality; and

(d) copolymers and blends of (a), (b) and (c);

wherein said fiber has a percent steam heatsetting shrinkage value which is about 70% or less of a percent steam heatsetting shrinkage value of an otherwise identical fiber consisting of only said first polyamide component; and

said carpet in an uncolored state having a red drink staining depth of less than 15 CIE  $\Delta E$  units and a coffee staining depth of less than about 10 CIE  $\Delta E$  units, and

wherein said inherently compatible polyamide component has a concentration of titratable amino end-groups less than 30 milliequivalents per kilogram.<sup>1</sup>

#### THE REFERENCES

Hoyt et al. (Hoyt)	5,340,886	Aug. 23, 1994
Lin	5,447,794	Sep. 5, 1995
Lijten et al. (Lijten)	5,468,555	Nov. 21, 1995

#### THE REJECTION

Claims 2, 3, 9, 10 and 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Lin in view of Lijten and Hoyt.

#### OPINION

We affirm the aforementioned rejection.

The appellants argue only claims 2 and 23 (brief, pages 5-10). We therefore limit our discussion to these claims. See 37 CFR 41.37(c)(1)(vii)(2004).

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<sup>1</sup> The examiner and the appellants should address whether the appellants' disclosure of percent sheath upper limits of about 15 wt%, about 30 wt% and about 90 wt% (specification, page 8, line 17 - page 9, line 2) provides adequate written descriptive support for the upper limit of about 9 percent recited in the appellants' claim 2.

*Rejection of claim 2*

Lin discloses an acid-dye and coffee stain resistant carpet (col. 1, lines 7-10; col. 2, lines 52-56; col. 6, lines 20-22) comprising a backing material tufted with stain resistant sheath/core bicomponent face fibers (col. 1, lines 7-9; col. 2, lines 54-56). The weight ratio of the sheath to the core can be 10:90 (col. 1, lines 41-42). Hence, the fiber can be 10 wt% sheath, which either falls within the about 9% recited in the appellants' claim 20 or is sufficiently close to about 9% that it would have fairly suggested, to one of ordinary skill in the art, that amount of sheath. See *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). The face fibers comprise a core of a first polyamide component which can be nylon 6 or nylon 6,6 (col. 1, lines 39-40), which are the appellants' most preferred core polyamides (specification, page 9, lines 19-20), covered by a sheath which can be nylon 6,12 (col. 1, lines 43-47), which is the appellants' most preferred sheath polyamide (specification, page 11, line 17). Because Lin's nylon 6, nylon 6,6 and nylon 6,12 are the same polyamides as those of the appellants, they necessarily have the compatibility, percent steam heatsetting shrinkage and staining

depth recited in the appellants' claim 20. "Products of identical chemical composition can not have mutually exclusive properties." *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Lin states that the fibers can be substantially eccentric (col. 2, lines 14-19), which indicates that they can be non-round. Moreover, Lijten teaches that carpet fibers having a trilobal cross-section, which is the appellants' preferred fiber cross-section (specification, page 14, line 10), are preferred due to their visual effect and properties such as adhesivity (col. 3, lines 16-21). Although round fibers are used in Lin's examples (col. 5, line 21), the reference does not limit the fiber cross-section to one which is round. Hence, one of ordinary skill in the art would have been led by Lijten to use trilobal cross-section fibers in Lin's carpet to obtain the benefits of trilobal cross-section fibers disclosed by Lijten.

Hoyt discloses that the acid dye staining of polyamides including nylon 6,12 can be reduced by chemically blocking a portion of the polyamide's amino end groups such that the terminal amino group content preferably is less than 25 milliequivalents per kilogram (col. 1, lines 34-41; col. 2, lines 22-35; col. 4, lines, 26-34; col. 5, lines 15-42; col. 6, lines

38-47; col. 7, lines 3-18). Like the appellants (specification, page 12, lines 17-18), Hoyt blocks the amino end groups with lactones (col. 5, lines 15-42).

The appellants argue that before one would be directed to low amino end group polymers, one would need to recognize that, in the context of a biocomponent fiber, a sheath polymer having a low amino end group content would be helpful (brief, page 7). Hoyt's disclosure that blocking amino end groups of a polyamide reduces staining (col. 6, lines 38-47) would have been considered by one of ordinary skill in the art to be beneficial regardless of whether the polyamide is a sheath or a fiber that has no sheath.

The appellants, therefore, have not convinced us of reversible error in the examiner's rejection of claim 2. Consequently, we affirm the rejection of that claim and 3, 9 and 10 that depend directly or indirectly therefrom.

*Claim 23*

The appellants argue that Hoyt's disclosure is limited to sulfonated polyamides (brief, page 9).<sup>2</sup> Hoyt's table 1, examples

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<sup>2</sup> The appellant's argument (brief, pages 8-9) in reliance upon the declaration of Robert H. Blackwell (filed February 4, 2005), that Lin's disclosure of a core having an amino end group (continued...)

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1-7, show that blocking amino end groups of a non-sulfonated polyamide reduces staining. Thus, we are not convinced of reversible error in the examiner's rejection of claim 23. Accordingly, we affirm the rejection of that claim.

*DECISION*

The rejection of claims 2, 3, 9, 10 and 23 under 35 U.S.C. § 103 over Lin in view of Lijten and Hoyt is affirmed.


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<sup>2</sup>(...continued)  
content of 50 mg/kg suggests a high amino end group content is not persuasive as to the sheath, in view of Hoyt's disclosure that blocking amino end groups reduces acid dye staining (col. 6, lines 38-47).

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(vii).

*AFFIRMED*

  
CHUNG K. PAK

CHUNG *K.* PAK  
Administrative Patent Judge

Terry J. Owens  
TERRY J. OWENS

Administrative Patent Judge

Benny A. Franklin

BEVERLY A. FRANKLIN  
Administrative Patent Judge

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